

Topic Maps-based Semblogging

with semblog-tm

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- ▶ Semantic blogging (semblogging) crosses blogs with the Semantic Web to enrich blog entries with more explicit and machine-understandable metadata, relating both to structure and content.
- ▶ This semantics is conveyed by semantic tags (semtags), connected by semantic associations (semrels).

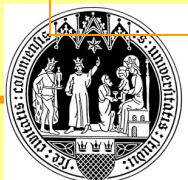


► Semblog-tm is a web-based application, realized as a plugin for the blojsom blogging engine, using Java and Tomcat with Velocity templates, with topic map operations via TMAPI, using TM4J and OKS as topic map engines, and with Axis for web services. A demonstrator is publicly available, and the source can be retrieved from sourceforge (semblog.sf.net).



Outline

1. Motivation, Problem and Diagnosis
2. Prior art and related work
3. Approach
4. Demonstration of main functionalities as seen by sembloggers
5. System architecture
6. Discussion and Implications



Simple tagging is not enough

Improve conventional blog tagging

→ Folksonomies

Lacks explicit structure (structural metadata)

Lacks explicit semantics (content metadata)

- ▶ Tags not semantically grounded (only names/strings)
- ▶ Tags not interrelated by typed semantic relations

Difficult to syndicate different blog entries by subject



Conventional blog tagging → Folksonomies

- ▶ Tags not semantically grounded
- ▶ Tags not interrelated by typed semantic relations

Enrich conventional blogging with more explicit, semantic, and machine-understandable metadata, relating both to structure and content



- ▶ Structured tagging exists
- ▶ Semantic wikis exist
- ▶ Semantic blogging with RDF existed, but not with Topic Maps
 - ▶ we were curious and wished to replicate
 - ▶ we believe that modelling the association types with topic maps is more natural, and the semantic retrieval is more powerful)

Challenge:

How to make semblogging easy and effortless for users?



1. **Seminal semblog system** (by Steve Cayzer and colleagues, HP/SWAD-E)
2. **Haystack semblogging client** (Karger & Quan)
3. **Semblog** (Personal Knowledge Publishing Suite) (Ohmukai, Takeda, Numa and colleagues)
4. **Semblogging research project** (KMI: Sereno, Eisenstadt, Buckingham Shum)
5. **Tagsocratic project** (Avesani, Cova, Hayes, Massa)
6. **semiBlog** (semlblogging to publish desktop data)



Early ideas:

- ▶ Jack Park
- ▶ Dmitry Bogachev
- ▶ a playground implementation with OKS kindly provided by Lars Marius Garshol

Recently:

- ▶ Rajbhandari, Andres, Naito & Wuwongse on semantic-augmented support in spatial-temporal multimedia blog management
(@TMRA06, 2006-10-12,
<http://www.topincs.com/tmra/2006/?190>)



Our analysis of the **six semblogging approaches and systems** identified reveals that:

- ▶ all are RDF-based
- ▶ suffer from not using Published Subjects as proxies for subjects, and
- ▶ do not employ semantic relations motivated by knowledge organization.

When we started in 2005, there was **no open effort on a topic maps-based semblogging system, and no research whatsoever** (see open space TMRA05 report)



We introduce **semblog-tm**, a

- ▶ Topic Maps- and
- ▶ PSI-based semblogging system,
- ▶ whose set of semantic relations follows a proposal in knowledge organization for the organization of association types



Starting from an application scenario with several sembloggers and servers, basic requirements are derived from the **three main use cases**:

- (1) **Managing lightweight ontologies**: Defining ontologies (semtags connected by semantic associations).
- (2) **Semblogging**: Connecting semblog entries with entries from those ontologies to attach semantics
- (3) **Managing aggregated semblogging data**: Provide other semantically-enabled systems with topic map fragments.



- ▶ We demonstrate and discuss typical capabilities of our prototype implementation, as seen from the users' perspective.



#1 Nick blogging conventionally

Donnerstag, 28 September 2006

Attending TMRA06 (1)

After some problems with my flight, I finally arrived in Leipzig to attend TMRA06, and made my way to Villa Ida. Nice new building.

(...)

In the spirit of this year's motto, Leveraging the Semantics, Steve Pepper proposed Public Resource Identifiers (PRIs), the successor of PSIs, to aid semantic interoperability.

(...)

In the demonstration session, a topic maps-based semblogging system called semblog was shown.

(...)

Posted by semblogger_Nick at 2:50 PM in [/](#)

[Comments \(0\)](#) [Trackbacks \(0\)](#)

This blog entry has the following semantics ([edit](#)):

- [is written by](#) [semblogger_Nick](#)

Formal metadata

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About:

Nick Name

Links

[Administration](#)

[Query own server](#)

[Query all known servers](#)

[Export XTM](#)

Categories:

/

Syndication:

[XML](#) [RSS](#) [ATOM](#)

powered by
blojsom



Nick discovering existing PSIs

Datei Bearbeiten Ansicht Gehe Lesezeichen Extras Hilfe		
http://www.tma.de/		
	<i>Leveraging the Semantics 1</i> Chair: Robert Barta Room: Schiller	<i>Topic Maps-based Portals and Information Retrieval</i> Chair: Gabriel Hopmans Room: Everth + Peterhans
9.00 – 10.30	Thea Miller, Hendrik Thomas Indices, Meaning and Topic Maps: Some Observations more ...	Prof. Sam Gyun Oh, Oknam Park Design and Users' Evaluation of a Topic Maps-Based Korean Folk Music Retrieval System more ...
	Lutz Maicher The Impact of Semantic Handshakes more ...	Eszter Horvati Compass more ...
	Patrick Durusau, Steven R. Newcomb The Essentials of the Topic Maps Reference Model (TMRM) more ...	Henrik Laursen Topic Maps Project at Royal Library, Copenhagen more ...
10.30 - 11.00	<i>coffee break</i>	
	<i>Technical Issues of Topic Mapping</i> Chair: Rani Pinchuk Room: Schiller	<i>Leveraging the Semantics 2</i> Chair: Markus Überall Room: Everth + Peterhans
11.00 – 12.00	Graham Moore, Kal Ahmed, Andrew Brodie Topic Map Objects more ...	Quintin H.J.F. Siebers, Peter-Paul Kruijssen Implementing Inference Rules in the Topic Maps Model more ...
	Robert Cerny Topincs: Topic Maps, REST and JSON more ...	Lars Heuer Towards converting the Internet into topic maps
Suchen: <input type="text"/> <input type="button" value="Abwärts suchen"/> <input type="button" value="Aufwärts suchen"/> <input type="button" value="Hervorheben"/> <input type="checkbox"/> Groß-/Kleinschreibung beachten		
Fertig		

Discover a PSI on a webpage (here: provided via Topincs)



- #3 Nick discovering other blog entries
- #4 Nick discovering semantics in other semblogger's blogs
- #5 Nick discovering semtags in Lutz Maicher's blog

Blog of Lutz Maicher

This is my personal blog

Search:

Switch to Elastic Layout

Donnerstag, 28 September 2006

TMRA06 Conference

I am the conference chair of TMRA06, the 2006 incarnation of the International Conferences on Topic Maps Research and Applications. The conference is organized by the Zentrum für Informations-, Wissens- und Dienstleistungsmanagement. TMRA06 will take place at Campus Villa Ida in Leipzig, Germany, Oct 11-12, 2006. Oct 10th will be a tutorial day. This year's conference motto is: Leveraging the Semantics The conference has the following sessions:

- Invited Plenary Talks (Steven R. Newcomb, Steve Pepper)
- Creation and Visualization of Topic Maps 1, 2
- Applied Topic Maps in Industry and Administration
- Standards-related Research
- Leveraging the Semantics 1, 2
- Topic Maps-based Portals and Information Retrieval
- Technical Issues of Topic Mapping
- Social Software with Topic Maps
- Demonstrations
- Poster Session
- Open Space Session 1, 2
- Closing Panel

Posted by semblogger_Maicher at 11:26 AM in [/](#)

[Comments \(0\)](#) [Trackbacks \(0\)](#)

- [is about Leveraging the semantics](#)
- [is written by semblogger_Maicher](#)
- [is about Villa Ida](#)
- [is about TMRA 06](#)
- [is about Demonstrations \(Conference session\)](#)
- [is about Zentrum für Informations-, Wissens- und Dienstleistungsmanagement](#)

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Follow from blog to semtag!

About:

Lutz Maicher

Links

[Administration](#)
[Query own server](#)
[Query all known servers](#)
[Export XTM](#)

Categories:

/

Recently:

TMRA06 Conference

blojsom
powered by

Semantic metadata



#6 Nick following semtags in Lutz Maicher's blog



Blog of Lutz Maicher
This is my personal blog

Search:

[Switch to Elastic Layout](#)

[Back to main page](#)
[Associate this topic with another topic](#)

Topic Names:

- **TMRA 06**
 - (Scope: [semblogger_Maicher](#))
 - sort name: TMRA 06

Topic Types:

- [Issue](#)

Topic Instances:

Associations:

- [is instance of Conference](#)
- [is preferential synonym used for International Conference on Topic Maps Research and Application](#)
- [is instrumental for Leveraging the semantics](#)
- [descends from \(is descendant of\) TMRA05](#)
- [is subject of TMRA06 Conference](#)

Occurrences:

200609281151 (Type: [publication date](#))

TMRA06 is the second conference in the TMRA conference series. TMRA – the international conference series on Topic Maps Research and Applications – is a scientific and industrial forum whose main object is connecting the key players in the Topic Maps community. Here you will find researchers, users in government and industry, as well as the vendors, the luminaries, and the standards creators gathered for an exchange of ideas in a stimulating setting. TMRA is where new challenges in Topic Maps are identified and open issues tackled. (Type: [human aboutness](#))

(Type: [machine metadata](#))

<http://www.tmra.de/psi/tmra06> (Type: [primary topic subject identifier](#))

Subject Identifiers:

<http://www.tmra.de/psi/tmra06>

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About:

Lutz Maicher

Links

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- [Export XTM](#)

Categories:

/

Recently:

- [TMRA06 Conference](#)

Syndication:

- [XML](#) [RSS](#) [ATOM](#)

powered by

Ontology level:

Semtag
(concept)

Semtag-semtag
relations



#6 Nick following semtags in Lutz Maicher's blog



Blog of Lutz Maicher
This is my personal blog

Search:

[Switch to Elastic Layout](#)

[Back to main page](#)
[Associate this topic with another topic](#)

Topic Names:

- Leveraging the semantics
 - (Scope: [semblogger_Maicher](#))
 - sort name: Leveraging the semantics

Topic Types:

- [Issue](#)

Topic Instances:

Associations:

- [is subject of TMRA06 Conference](#)
- [is purpose of **TMRA 06**](#)

Occurrences:

http://localhost:8080/axis/psi/Leveraging_the_semantics (Type: [primary topic subject identifier](#))

Conference motto of TMRA06. (Type: [human aboutness](#))

(Type: [machine metadata](#))

200609281304 (Type: [publication date](#))

Subject Identifiers:

http://localhost:8080/axis/psi/Leveraging_the_semantics

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About:
Lutz Maicher

Links

- [Administration](#)
- [Query own server](#)
- [Query all known servers](#)
- [Export XTM](#)

Categories:
/

Recently:
TMRA06 Conference

Syndication:

Follow to related semtag!



#7 Nick following semtags in student's blog

Students of the University of Leipzig

Syndicated blog by students of the University of Leipzig

Search: 

[Switch to Elastic Layout](#)

Donnerstag, 28 September 2006

What is Villa Ida?

"Villa Ida" is a historical building in Leipzig. The Villa Ida is surrounded by the Mediocampus Leipzig (Campus Villa Ida), an institutional part of the Leipzig Media Foundation.

Posted by [semblogger_uleipzig](#) at 11:17 AM in [/](#)

[Comments \(0\)](#) [Trackbacks \(0\)](#)

This blog entry has the following semantics ([edit](#)):

- [is written by semblogger_uleipzig](#)
- [is about Villa Ida](#)

What is the Zentrum für Informations-, Wissens- und Dienstleistungsmanagement

The "Zentrum für Informations-, Wissens- und Dienstleistungsmanagement" is a non-profit society cooperating with the University of Leipzig.

Posted by [semblogger_uleipzig](#) at 10:58 AM in [/](#)

[Comments \(0\)](#) [Trackbacks \(0\)](#)

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About:
Students of the University of Leipzig

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[Export XTM](#)

Categories:
[/](#)

Recently:
[What is Villa Ida?](#)
[What is the Zentrum](#)

Blog entry with semantics



#7 Nick following semtags in student's blog



Three semtags:

Villa Ida

Students of the University of Leipzig
Syndicated blog by students of the University of Leipzig

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[Associate this topic with another topic](#)

Topic Names:

- Villa Ida
 - (Scope: [semblogger_uleipzig](#))
 - sort name: Villa Ida

Topic Types:

- [Issue](#)

Topic Instances:

Associations:

- [is subject of](#) [What is Villa Ida?](#)
- [is in place of \(is geographic part of\)](#) [Leipzig](#)

Occurrences:

200609281118 (Type: [publication date](#))

"Villa Ida" is a historical building in Leipzig. The Villa Ida is surrounded by the Mediocampus Leipzig (Campus Villa Ida), an institutional part of the Leipzig Media Foundation. (Type: [human aboutness](#))

<http://www.leipziger-medienstiftung.de/villa/> (Type: [primary topic subject identifier](#)) (Type: [machine metadata](#))

Subject Identifiers:

Leipzig

Students of the University of Leipzig
Syndicated blog by students of the University of Leipzig

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[Associate this topic with another topic](#)

Topic Names:

- Leipzig
 - (Scope: [semblogger_uleipzig](#))
 - sort name: Leipzig

Topic Types:

- [Issue](#)

Topic Instances:

Associations:

- [is in place of \(is geographic part of\)](#) [Germany](#)
- [is place for \(is geographic whole for\)](#) [University Leipzig](#)
- [is place for \(is geographic whole for\)](#) [Villa Ida](#)
- [is place for \(is geographic whole for\)](#) [Zentrum für Informations-, Wissens- und Dienstleistungsmanagement](#)

Occurrences:

200609281046 (Type: [publication date](#))

<http://localhost:8080/axis/psi/Leipzig> (Type: [primary topic subject identifier](#))
The town Leipzig in Germany. (Type: [human aboutness](#)) (Type: [machine metadata](#))

Subject Identifiers:

Zentrum für ...

Students of the University of Leipzig
Syndicated blog by students of the University of Leipzig

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[Associate this topic with another topic](#)

Topic Names:

- Zentrum für Informations-, Wissens- und Dienstleistungsmanagement
 - (Scope: [semblogger_uleipzig](#))
 - sort name: Zentrum für Informations-, Wissens- und Dienstleistungsmanagement

Topic Types:

- [Issue](#)

Topic Instances:

Associations:

- [A is cooperating with](#) [B University Leipzig](#)
- [is subject of](#) [What is the Zentrum für Informations-, Wissens- und Dienstleistungsmanagement?](#)
- [is in place of \(is geographic part of\)](#) [Leipzig](#)

Occurrences:

200609281107 (Type: [publication date](#))

<http://www.ziwd-leipzig.de> (Type: [primary topic subject identifier](#))

Zentrum für Informations-, Wissens- und Dienstleistungsmanagement (Type: [human aboutness](#)) (Type: [machine metadata](#))

Subject Identifiers:



#8 Nick following semtags in Steve Pepper's blog (1)



Steve Pepper's blog on Subject Identity Advocating Subject Identity

Search:

[Switch to Elastic Layout](#)

Donnerstag, 28 September 2006

On PRIs and PSIs

A PRI (Public Resource Identifier) is an http: IRI that has been minted for the express purpose of identifying some subject.

PRIs are the successors of PSIs (Published Subjects).

Published Subjects are the successors of Public Subjects.

At TMRA06 I'll present "A Proposal for Public Resource Identifiers"

Here is the abstract:

The only way to achieve semantic interoperability is by making it possible to express what subjects a piece of information is about in such a way that it can be connected with other pieces of information that are about the same subject. Because of the fragility of names, this requires the use of globally unique identifiers for subjects of discourse. This paper describes the requirements on a mechanism for defining and assigning unique global identifiers for arbitrary subjects on the World Wide Web and presents the case for Public Resource Identifiers (PRIs) as the best solution to this problem.

Posted by [semblogger_Pepper](#) at 1:20 PM in [/](#)

[Comments \(0\)](#) [Trackbacks \(0\)](#)

This blog entry has the following semantics ([edit](#)):

- [is about](#) [Published Subject Indicator](#)
- [is about](#) [Published Subject](#)
- [is about](#) [TMRA 06](#)
- [is about](#) [Published Subject Identifier](#)
- [is about](#) [PSI](#)
- [is about](#) [Public Subject](#)
- [is about](#) [Public Resource Identifier](#)
- [is written by](#) [semblogger_Pepper](#)

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About:

[Steve Pepper](#)

Links

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[Export XTM](#)

Categories:

[/](#)

Recently:

[On PRIs and PSIs](#)

Syndication:

[XML](#) [RSS](#) [ATOM](#)



#8 Nick following semtags in Steve Pepper's blog (1)



Three semtags:

Public Resource Identifier

Steve Pepper's blog on Subject Identity
Advocating Subject Identity

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[Associate this topic with another topic](#)

Topic Names:

- Public Resource Identifier
 - (Scope: [semblogger_Pepper](#))
 - sort name: Public Resource Identifier (PRI)

Topic Types:

- [Issue](#)

Topic Instances:

Associations:

- [descends from \(is descendant of\) Published Subject](#)
- [is beneficial for Semantic Interoperability](#)
- [is subject of On PRIs and PSIs](#)

Occurrences:

http://localhost:8080/axis/psi/Public_Resource_Identifier (Type: [primary topic subject identifier](#))

Concept for subject identification as proposed by Steve Pepper in his talk "A Proposal for Public Resource Identifiers" at TMRA06. (Type: [human aboutness](#))

200609281326 (Type: [publication date](#))

(Type: [machine metadata](#))

Published Subject

Steve Pepper's blog on Subject Identity
Advocating Subject Identity

[Back to main page](#)

[Associate this topic with another topic](#)

Topic Names:

- Published Subject
 - (Scope: [semblogger_Pepper](#))
 - sort name: Published Subject

Topic Types:

- [Issue](#)

Topic Instances:

Associations:

- [descends from \(is descendant of\) Public Subject](#)
- [is composed of \(has as matter\) Published Subject Identifier](#)
- [is predecessor of Public Resource Identifier](#)
- [is subject of On PRIs and PSIs](#)
- [is composed of \(has as matter\) Published Subject Indicator](#)

Occurrences:

200609281322 (Type: [publication date](#))

http://localhost:8080/axis/psi/Published_Subject (Type: [primary topic subject identifier](#))

Refinement of Public Subjects during XTM specification. (Type: [human aboutness](#))

(Type: [machine metadata](#))

Public Subject

Steve Pepper's blog on Subject Identity
Advocating Subject Identity

[Back to main page](#)

[Associate this topic with another topic](#)

Topic Names:

- Public Subject
 - (Scope: [semblogger_Pepper](#))
 - sort name: Public Subject

Topic Types:

- [Issue](#)

Topic Instances:

Associations:

- [is predecessor of **Published Subject**](#)
- [is subject of On PRIs and PSIs](#)

Occurrences:

200609281321 (Type: [publication date](#))

(Type: [machine metadata](#))

(Type: [human aboutness](#))

http://localhost:8080/axis/psi/Public_Subject (Type: [primary topic subject identifier](#))

Subject Identifiers:

http://localhost:8080/axis/psi/Public_Subject



#10 Nick editing semtags

Blog of Nick Name

My personal blog

Donnerstag, 28 September 2006
Attending TMRA06 (1)

After some problems with my flight, I finally arrived in Leipzig to attend TMRA06, and made my way to Villa Ida. Nice new building.
(...)

In the spirit of this year's motto, Leveraging the Semantics, Steve Pepper proposed Public Resource Identifiers (PRIs), the successor of PSIs, to aid semantic interoperability.
(...)

In the demonstration session, a topic maps-based semblogging system called semblog was shown.
(...)

Posted by [semblogger_Nick](#) at 4:35 PM in [/](#)
[Comments \(0\)](#) [Trackbacks \(0\)](#)

This blog entry has the following semantics ([edit](#)):

- [is written by semblogger_Nick](#)

[Back to main page](#)
[Back to entry](#)

Choose Semtags

User: [semblogger_Nick](#)
Blog entry: [Attending TMRA06 \(1\)](#)

[Save](#) [Reset](#) [Copy](#)

Available Semtags (add new): (Check a semtag to add it to this entry)	Selected Semtags: (Check a semtag to delete it from this entry)	All Semtags: (Check a semtag to copy it to the topic-map)	Semtags from last query result: (Check a semtag to copy it to the topic-map)
		<input type="checkbox"/> Conference <input type="checkbox"/> Conference session <input type="checkbox"/> Demonstrations (Conference session) <input type="checkbox"/> Germany <input type="checkbox"/> Leibzie	

[Save](#) [Reset](#) [Copy](#)

Edit semantics!



#11 Nick copying and attaching semtags

blojsom

[Back to main page](#)
[Back to entry](#)

Choose Semtags

User: [semblogger_Nick](#)
Blog entry: [Attending TMRA06 \(1\)](#)

Available Semtags (add new): (Check a semtag to add it to this entry)	Selected Semtags: (Check a semtag to delete it from this entry)	All Semtags: (Check a semtag to copy it to the topic-map)	Semtags from last query result: (Check a semtag to copy it to the topic-map)
		<input checked="" type="checkbox"/> Leveraging the semantics <input checked="" type="checkbox"/> PSI <input checked="" type="checkbox"/> Public Resource <input type="checkbox"/> Identifier <input type="checkbox"/> Public Subject <input type="checkbox"/> Published Subject	

Select existing semtags
Copy to own view

blojsom

[Back to main page](#)
[Back to entry](#)

Choose Semtags

User: [semblogger_Nick](#)
Blog entry: [Attending TMRA06 \(1\)](#)

Available Semtags (add new): (Check a semtag to add it to this entry)	Selected Semtags: (Check a semtag to delete it from this entry)	All Semtags: (Check a semtag to copy it to the topic-map)	Semtags from last query result: (Check a semtag to copy it to the topic-map)
<input type="checkbox"/> Leipzig <input type="checkbox"/> Leveraging the semantics <input type="checkbox"/> PSI <input type="checkbox"/> Public Resource <input type="checkbox"/> Identifier <input type="checkbox"/> TMRA 06 <input type="checkbox"/> ...		<input type="checkbox"/> Conference <input type="checkbox"/> Conference session <input type="checkbox"/> Demonstrations (Conference session) <input type="checkbox"/> Germany <input type="checkbox"/> Leipzig	

Copied semtags are now available in own view



#11 Nick copying and attaching semtags

The image displays two sequential screenshots of the 'blojsom' web application interface, illustrating the process of selecting and attaching semtags to a blog entry.

Left Screenshot: The 'Choose Semtags' page shows the user 'semblogger_Nick' and the blog entry 'Attending TMRA06 (1)'. The 'Available Semtags (add new):' list is highlighted with an orange box and contains the following items, all with checked boxes: Leipzig, Leveraging the semantics, PSI, Public Resource Identifier, TMRA 06, and Villa Ida. An orange arrow points from the text 'Select from available semtags in own view' to this list.

Right Screenshot: The same 'Choose Semtags' page is shown, but the 'Selected Semtags:' list is now populated with the same six items as the 'Available Semtags' list, all with unchecked boxes. This list is also highlighted with an orange box, and an orange arrow points from the text 'Selected semtags now attached to semblog entry' to it.



#12 Nick looking at the semtags in his entry

After some problems with my flight, I finally arrived in Leipzig to attend TMRA06, and made my way to Villa Ida. Nice new building.

(...)

In the spirit of this year's motto, Leveraging the Semantics, Steve Pepper proposed Public Resource Identifiers (PRIs), the successor of PSIs, to aid semantic interoperability.


(...)

In the demonstration session, a topic maps-based semblogging system called semblog-tm was shown.

(...)

Posted by semblogger_Nick at 4:35 PM in /

[Comments \(0\)](#) [Trackbacks \(0\)](#)

This blog entry has the following semantics 

- [is about TMRA 06](#)
- [is written by semblogger_Nick](#)
- [is about PSI](#)
- [is about Public Resource Identifier](#)
- [is about Leipzig](#)
- [is about Villa Ida](#)
- [is about Leveraging the semantics](#)

Display semtags attached
to this semblog entry

				1	2	
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About:

[Nick Name](#)

Links

[Administration](#)

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Categories:

/

Syndication:

[XML](#) [RSS](#) [ATOM](#)

blojsom
powered by



#13 Nick defining his own semtag (1)

blojsom

[Back to main page](#)
[Back to entry](#)

Choose Semtags

User: semblogger_Nick
Blog entry: Attending TMRA06 (1)

Save Reset Copy

Available Semtags (add new): (Check a semtag to add it to this entry)	Selected Semtags: (Check a semtag to delete it from this entry)	All Semtags: (Check a semtag to copy it to the topic-map)	Semtags from last query result: (Check a semtag to copy it to the topic-map)
	<input type="checkbox"/> Leipzig	<input type="checkbox"/> Conference	
	<input type="checkbox"/> Leveraging the semantics	<input type="checkbox"/> Conference session	
	<input type="checkbox"/> PSI	<input type="checkbox"/> Demonstrations (Conference session)	
	<input type="checkbox"/> Public Resource Identifier	<input type="checkbox"/> Germany	
	<input type="checkbox"/> TMRA 06	<input type="checkbox"/> Public Subject	
	<input type="checkbox"/> Villa Ida		

Save Reset Copy



#14 Nick defining his own semtag (2)

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ADD NEW SEMTAG

Topic Name:

Topic Sort Name:

Subject Identifier:

human aboutness:

machine metadata:

PSI automatically created



#15 Nick adding his own semtag to his blog entry

blojsom

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[Back to entry](#)

Choose Semtags

User: semblogger_Nick
Blog entry: Attending TMRA06 (1)

Save Reset Copy

Available Semtags (add new): (Check a semtag to add it to this entry)	Selected Semtags: (Check a semtag to delete it from this entry)	All Semtags: (Check a semtag to copy it to the topic-map)	Semtags from last query result: (Check a semtag to copy it to the topic-map)
<input checked="" type="checkbox"/> seblog	<input type="checkbox"/> Leipzig <input type="checkbox"/> Leveraging the semantics <input type="checkbox"/> PSI <input type="checkbox"/> Public Resource Identifier <input type="checkbox"/> TMRA 06 <input type="checkbox"/> Villa Ida	<input type="checkbox"/> Conference <input type="checkbox"/> Conference session <input type="checkbox"/> Demonstrations (Conference session) <input type="checkbox"/> Germany <input type="checkbox"/> Public Subject	

Save Reset Copy

Attach semtag to semblog entry



#18 Nick associating semtags

The screenshot shows two parts of the blojsom interface. On the left, the 'Blog of Nick Name' page displays metadata for a semtag, including 'Topic Names', 'Topic Types', 'Topic Instances', 'Associations', 'Occurrences', and 'Subject Identifiers'. A red box highlights the link 'associate this topic with another topic', with an arrow pointing to the 'DEFINE MAPPING FORM' on the right.

The 'DEFINE MAPPING FORM' is titled 'Selected semtag: semblog-tm'. It features a dropdown menu for 'Association Type' with the following options:

- has preferential synonym
- equivalence relationship**
- RelClass1-Type 1**
- has preferential synonym
- is preferential synonym used for
- polyseme relationship**
- RelClass1-Type 2**
- is descriptor for
- is described by
- instance-category**
- instantiation**
- RelClass2-Type 1**
- is category/type for
- is instance of
- is-a (taxonomy)**
- subtype-supertype**
- RelClass2-Type 2**
- is-a (is subtype of)
- is supertype for
- RelClass2-Type 3**

On the right, a '2nd semtag from User' dropdown is set to 'semllogger_Nick'. Below it is a 'Select User' button and a list of semtags, with 'Leveraging the semantics' selected and highlighted by a red box. An arrow points from the 'Association Type' dropdown to the 'Leveraging the semantics' option.

Annotations in red text include: 'Select association type from predefined list' pointing to the dropdown, 'Select 2nd semtag' pointing to the dropdown, and 'Associate this semtag with another semtag!' pointing to the link in the left panel.



blojsom

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DEFINE MAPPING FORM

Selected semtag: [semblog-tm](#)

Association Type:

2nd semtag from User:

Select User

- Leipzig
- Leveraging the semantics
- PSI
- Public Resource
- Identifier
- [semblog](#)

The chosen mapping is:

Semblog-tm is beneficial for Leveraging the Semantics



#21 Narrator explaining semantic retrieval

Available semtags for all users [topicmap_0, topicmap_2, lars, semblogger_Nick, default, semblogger_uleipzig, user1]:

- [Conference](#)
- [Conference session](#)
- [Demonstrations \(Conference session\)](#)
- [Germany](#)
- [Leipzig](#)
- [Leveraging the semantics](#)
- [PSI](#)
- [Public Resource Identifier](#)
- [Public Subject](#)
- [Published Subject](#)
- [Published Subject Identifier](#)
- [Published Subject Indicator](#)
- [Semantic Interoperability](#)
- [semblog](#)
- [semblog](#)
- [semblog-tm](#)
- [TMRA](#)
- [TMRA 06](#)
- [TMRA05](#)
- [PSI](#)

complete results only servers in list

Query results for **TMRA 06** :

- [Attending TMRA06 \(1\)](#)
- [On PRIs and PSIs](#)
- [TMRA06 Conference](#)

About:
Nick Name

Links
[Administration](#)
[Query own server](#)
[Query all known servers](#)
[Export result to XTM](#)

Recently:
Attending TMRA06 (1)

Syndication:
XML RSS ATOM

powered by **blojsom**



#22 Nick querying semtags by all sembloggers on the same semblog server



Blog of Nick Name
My personal blog

Search:

Switch to Elastic Layout

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Available semtags for all users [lars, semblogger_Nick, default, semblogger_uipzig, user1]:

- Germany
- Leipzig
- Leveraging the semantics
- PSI
- Public Resource Identifier
- semblog
- semblog
- semblog-tm
- TMRA
- TMRA 06
- University Leipzig
- Villa Ida
- Zentrum für Informations-, Wissens- und Dienstleistungsmanagement

Query

Blog of Nick Name
My personal blog

Search:

Switch to Elastic Layout

[Back to main page](#)

Available semtags for all users [lars, semblogger_Nick, default, semblogger_uipzig, user1]:

- Germany
- Leipzig
- Leveraging the semantics
- PSI
- Public Resource Identifier
- semblog
- semblog
- semblog-tm
- TMRA
- TMRA 06
- University Leipzig
- Villa Ida
- Zentrum für Informations-, Wissens- und Dienstleistungsmanagement

Query results for **TMRA 06** :

- 1 [Attending TMRA06 \(1\)](#)

Follow result

« September »

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

About:
Nick Name

Links
[Administration](#)
[Query own server](#)
[Query all known servers](#)
[Export XTM](#)

Categories:
/

Recently:
Attending TMRA06
(1)



#24 Nick querying semtags by all sembloggers on all known semblog servers for the semtag TMRA06 (display complete results)

Available semtags for all users [topicmap_0, topicmap_2, lars, semblogger_Nick, default, semblogger_uleipzig, user1]:

- Conference
- Conference session
- Demonstrations (Conference session)
- Germany
- Leipzig
- Leveraging the semantics
- PSI
- Public Resource Identifier
- Public Subject
- Published Subject
- Published Subject Identifier
- Published Subject Indicator
- Semantic Interoperability
- semblog
- semblog
- semblog-tm
- TMRA
- TMRA 06
- TMRA05
- PSI

complete results only servers in list

Query results for [TMRA 06](#) :

- 1 [Attending TMRA06 \(1\)](#)
- 2 [On PRIs and PSIs](#)
- 3 [TMRA06 Conference](#)

[Follow result](#)

About:
Nick Name

Links
[Administration](#)
[Query own server](#)
[Query all known servers](#)
[Export result to XTM](#)

Recently:
Attending TMRA06 (1)

Syndication:
XML RSS ATOM

blojsom powered by

3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30



#25 Nick displaying the results and exporting them to .xTM

Topic Types:

- [Blog entry](#)

Topic Instances:

Associations:

- [is about PSI](#)
- [is about Public Subject](#)
- [is about Published Subject Indicator](#)
- [is about Published Subject Identifier](#)
- [is about Published Subject](#)
- [is about Public Resource Identifier](#)
- [is written by semblogger_Pepper](#)
- [is about TMRA 06](#)

The result

Occurrences:

Thu Sep 28 13:20:51 CEST 2006 (Type: [Blog entry publication date](#))

http://localhost:8080/blojsom/blog/semblogger_Pepper/?permalink=On-PRIs-and-PSIs.htm
(Type: [Permalink](#))

A PRI (Public Resource Identifier) is an http: IRI that has been minted for the express purpose of identifying some subject.

PRIs are the successors of PSIs (Published Subjects).

Published Subjects are the successors of Public Subjects.

At TMRA06 I'll present "A Proposal for Public Resource Identifiers"

Here is the abstract:

The only way to achieve semantic interoperability is by making it possible to express what subjects a piece of information is about in such a way that it can be connected with other pieces of information that are about the same subject. Because of the fragility of names, this requires the use of globally unique identifiers for subjects of discourse. This paper describes the requirements on a mechanism for defining and assigning unique global

Mit dieser XML-Datei sind anscheinend keine Style-Informationen verknüpft. Nachfolgend wird die Baum-

```
- <topicMap xml:base="http://localhost:8080/blojsom_2/blog/semblogger_Nick/usermap.xtm">
- <topic id="id178">
- <instanceOf>
  <topicRef xlink:href="#id2"/>
</instanceOf>
- <subjectIdentity>
  <subjectIndicatorRef xlink:href="http://www.schmitz-esser.de/ICLO/v0.01/rt_enhancer"/>
</subjectIdentity>
- <baseName>
  <baseNameString>enhancer</baseNameString>
</baseName>
</topic>
- <topic id="id75">
- <instanceOf>
  <topicRef xlink:href="#id2"/>
</instanceOf>
- <subjectIdentity>
  <subjectIndicatorRef xlink:href="http://www.schmitz-esser.de/ICLO/v0.01/rt_regulated"/>
</subjectIdentity>
- <baseName>
  <baseNameString>regulated</baseNameString>
</baseName>
</topic>
- <topic id="id298">
- <subjectIdentity>
  <subjectIndicatorRef xlink:href="http://psi.wim.uni-koeln.de/blog-entry-content"/>
</subjectIdentity>
- <baseName>
```

The XTM export

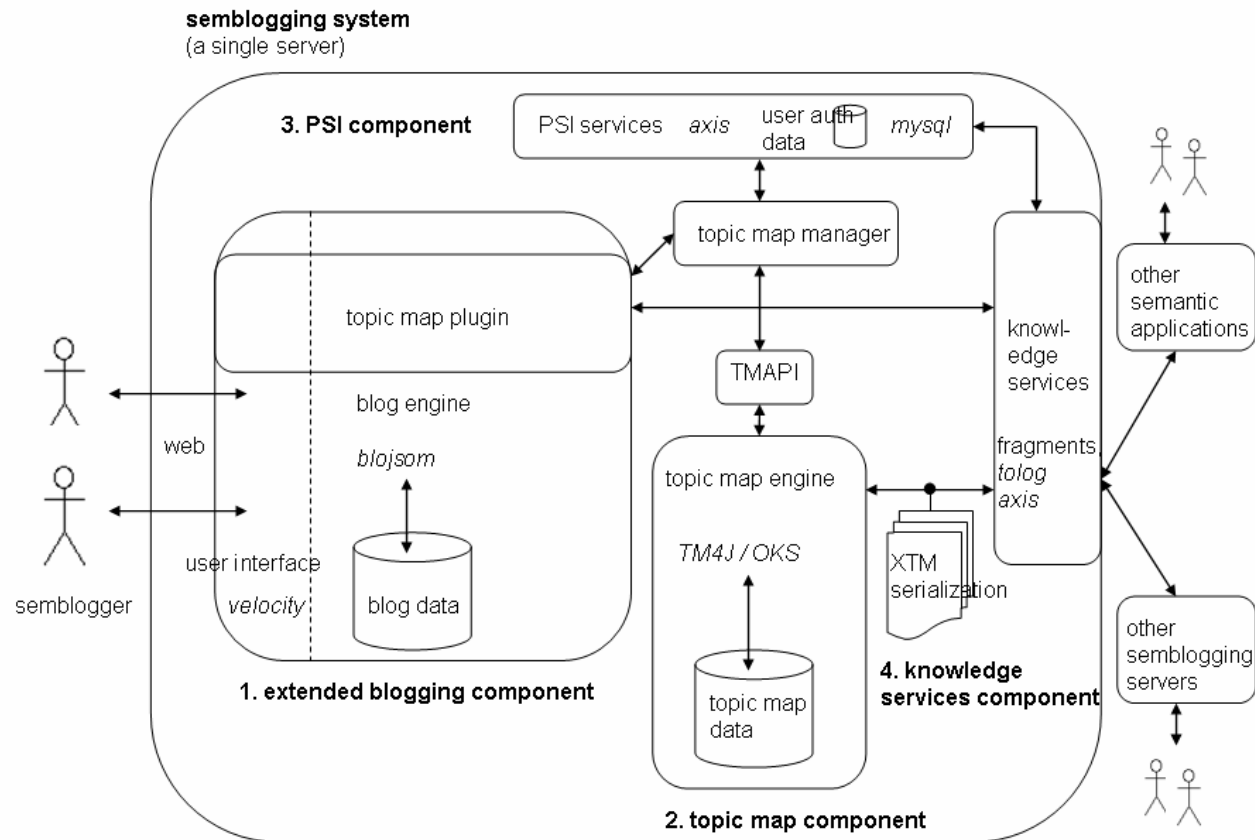


The main components of our system architecture are:

- ▶ blogging,
- ▶ topic map,
- ▶ and services:
 - ▶ PSI,
 - ▶ knowledge, and
 - ▶ registry services (implemented as web services).



#26 Narrator explaining the general system architecture



#27 Narrator explaining scalability and distribution/P2P-like aspects

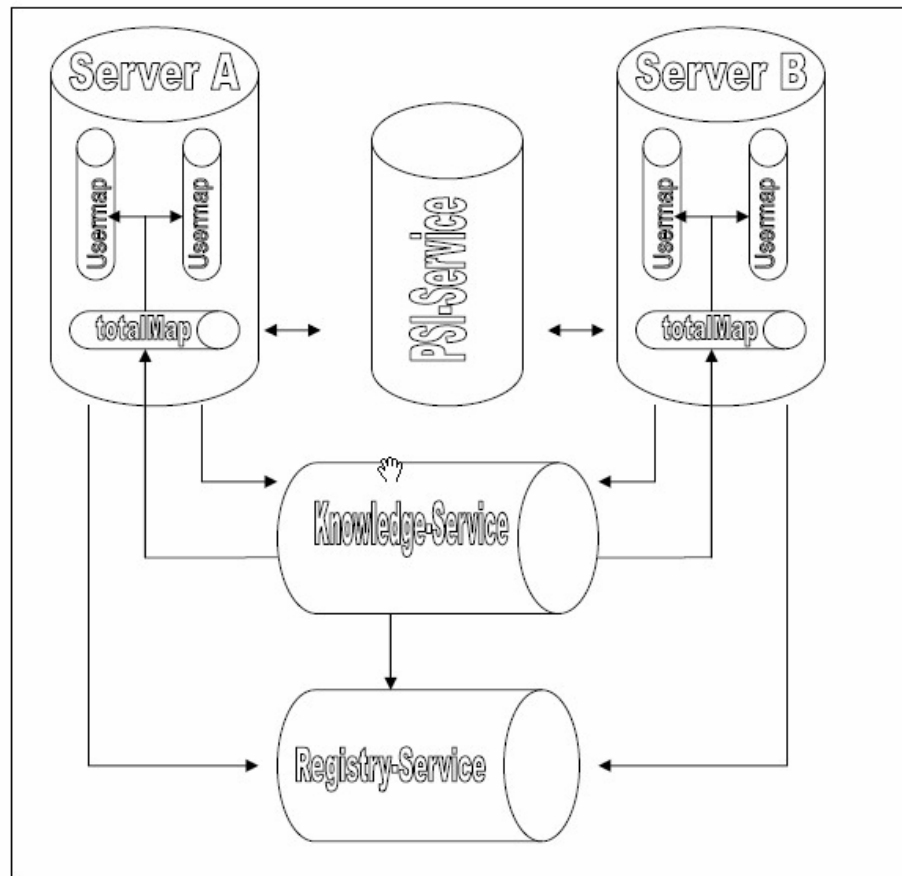
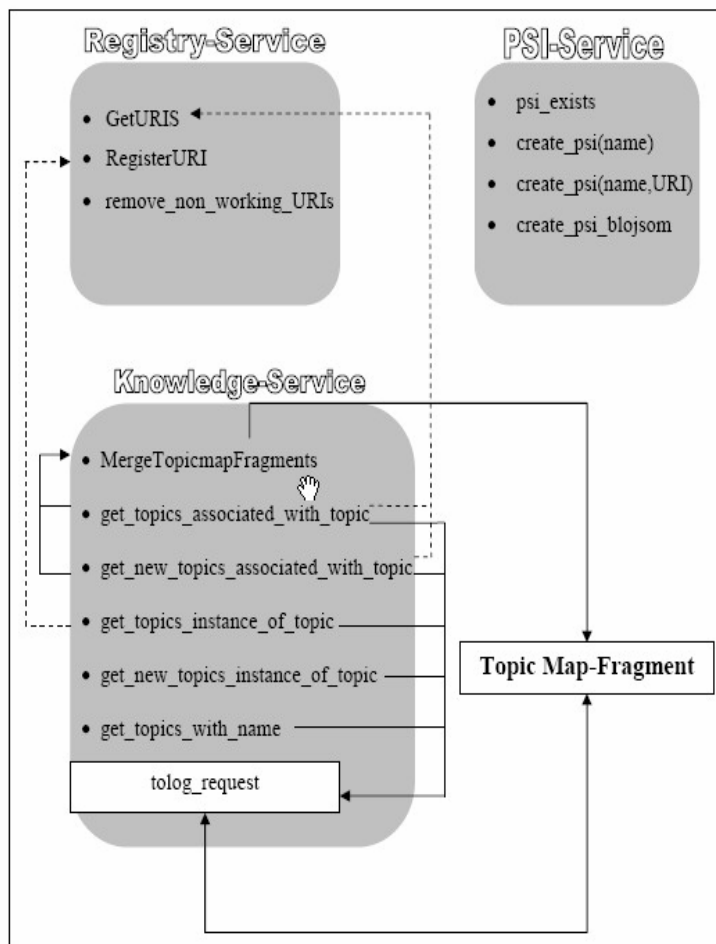


Abbildung 3-6 Architektur des verteilten Semblogging-Systems



#28 Narrator explaining semantic knowledge services



- Currently only a university **research prototype**, not in practical use, needs to move to being actively used by a community
- Needs some **clean-up** (e.g. GUI, code, naming restrictions, use of published subjects), and optimization
- Just one particular set of **predefined association types** (clearly needs refinement, e.g. rhetorical ones)
- No possibility to define **application-specific subtypes of association types**
- By design, **only semtags can be copied**, not semrels (associations)



- Instead of the association type **Synonymy** basename/scope would be more topic mappish
- **PSI service** could be more sophisticated, in the long run to be replaced by a third-party solution
- Use of **TMAPI limits** (e.g. no TMRAP, because TMRAP or tolog via TMAPI is not yet implemented)
- Needs **OKS** for tolog, because TM4J's tolog is not sufficient



- First **open-source topic maps-based semblogging** system
- The only semblogging system **using PSIs**
- The only semblogging system based on **association types** motivated and governed by Knowledge Organization theory
- First semblogging system with **open semantic knowledge services**, aggregating the data and providing them back to any topic map fragment consumers
→ cooperation with other PSI services!



6. Discussion and Implications: Implications for Research and Practice, Outlook

- Expand actual use in semblogging communities
- Explore interoperability with other PSI and topic map aggregation services, with knowledge service consumers
- Explore P2P-like distribution further: e.g. TMRAP and semantic overlay in P2P networks with topic map data
- Further work under way on RDF/Sparql with topic maps/tolog interoperability in Semantic Knowledge Services, consuming semblog-tm services



- ▶ Have a look at the detailed video

Sigel, A., & Bünthen, L. (2006): Topic Maps-based semblogging with semblog-tm: System demonstration (@ TMRA06): Video (.avi) (16'40") and edited transcript (.pdf)

<http://www.wim.uni-koeln.de/uploads/media/semblog-tm-demo-at-TMRA06.zip>

- ▶ Get the source via SVN checkout from semblog.sf.net

- ▶ Ask for a free CD

- ▶ Read the accompanying paper (TMRA06 proceedings, forthcoming in 2007)

